1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

231

Fig. 1. Feeding of Dogs.

226

Fig. 2. Fishing with Hand-Net.

[Facing p. 513]

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

VII. — FISHING, HUNTING, AND WAR.

226
136

Fishing. — As fish is the principal food of the Maritime Koryak, I shall begin with a description of the fishing-industry. It is necessary to remark that my own observations apply in the main to the bays and rivers of the Sea of Okhotsk; but through inquiry I have also gathered some information concerning the fishing-pursuits of the people who live on Bering Sea.

Species of Fish. — While the fishermen of arctic Siberia subsist mainly on *Coregonus*, a genus of the family *Salmonidæ*, which ascend the rivers from the Polar Sea, the principal food of the inhabitants of the northern coasts of the Pacific Ocean consists of *Oncorhynchus*, another genus of the same family.[1] The leading position as a means of sustenance belongs to the dog-salmon (*Oncorhynchus lagocephalus*, or *O. keta*). For this reason the dog-salmon, whose proper name is qeta′ or qetāqet, is often called ɫgi′-anā′n ("genuine fish") or simply ɤ′nēm ("fish"). Next in importance is the humpback salmon (*Oncorhynchus proteus* Pall. or *O. horbusha;* Koryak, kalā′ɫn). The red salmon (*O. lycaodon* or *O. nerka;* Koryak, wiyu′wi) is less important, for only few of these enter the Koryak rivers; greater numbers of them are caught by the Kamchadal. The chawicha (*Salmo orientalis;* Koryak, a′vač or e′vič), too, belongs to the rare visitors of the Koryak rivers; but it enters the rivers of southern Kamchatka in great numbers. The kundscha (*Salmo leucomænis* Pall.) is quite as rare, but it is met with near the village of Yamsk.

Salmon of the genus *Oncorhynchus* enter the rivers in summer to spawn. They do not return to the sea, but continue to ascend the rivers until completely exhausted. Then they die. Not infrequently the river carries back to the sea the half-dead fish, which are not able to withstand the current, and they die before reaching the sea. In early spring the fry hatched in the rivers drift down to the sea, grow up there, and, having reached full maturity after several years, again ascend the river to spawn, and perish there. The migration of the salmon has been termed by Middendorf "migration of death" (*Todwandern*).

Among the other *Salmonidæ* the most important in the household economy of the Koryak is the small uyo′k (yĕrь) of the Russians (*Salmo socialis;*

[1] Some species of *Coregonus* — such as *Coregonus laurichtys*, *Coregonus muksun*, and *Coregonus clupeoides* — enter the largest and longest river of Bering Sea on the Siberian side (the Anadyr), and the largest river of the Okhotsk Sea (the Penshina), in great quantities. The inhabitants of the village Markova (about 530 miles from the mouth of the river Anadyr) catch these fish every summer. I was also told of these fish by the inhabitants of the Russian settlement Penshinsk, about 330 miles from the mouth of the Penshina. *Coregonus laurichtys* appears as early as the middle of June; *Coregonus clupeoides* in September only.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak R-Y-4

226 Koryak, hɪtgɪ'yɪt), which belongs to the genus of smelts (*Osmerus*). Other
136 species of *Osmerus*, too, occur, but in small numbers as compared with the uyo'k. The uyo'k goes with the tide to the river-mouths and bays to spawn, in such dense masses that at low tide the shore is covered with a solid layer of roe. After spawning, the uyo'k returns to the sea.

The salveline (*Salvelinus malma* Walb), which belongs to the genus *Salmo*, also plays a rôle of some importance. The Koryak distinguish two kinds of salveline, — the large (uitɪ'wɪt) and the small (qai'ttwɪt), — but these are clearly of the same species, at different ages. This may be gathered also from the meaning of the Koryak word qai ("young"). The salveline spends a rather long time in freash water. Together with other fish migrating in shoals, it reaches the rivers in summer, ascends their mountain-tributaries in autumn, and goes down to the sea towards spring.

In the rivers is found also the grayling, of the genus *Thymallus*. The catch of tom-cod (*Eleginus Navaga;* Koryak wē'gen), of the family *Gadidæ*, is also used, but not so much as the various species of salmon. Herring (*Clupea harengus;* Koryak, ukii') enter the mouths of some rivers, but not every year, as is the case on the east coast of Kamchatka. In the river-mouths flounders (*Pleuronectidæ;* Koryak, a'lpɪ) are also procured.

Finally we must mention the eel-pout (walā'ñɪn) and the pike (tutkɪ'tūt), which at times are caught in river-nets, but are not specially sought by the Koryak.

226 *Fishing-Seasons.* — The dog-salmon, the principal object of the Koryak
221 fisheries, does not enter all the rivers at the same time, but its migration begins approximately in the early or middle part of July. The main run lasts three or four weeks, but continues, with diminished numbers of fish, until the end of August. The fish enters the rivers at high tide: therefore the fishermen, before high tide, assemble off the mouth of the river; and after high tide, higher up the river. The dog-salmon does not go far up the river. Even in the river Gishiga — next to the Penshina, the largest of the Koryak rivers — it does not ascend farther than sixty-five miles from the mouth. On my route from Gishiga to the Kolyma, however, I met with dog-salmon in the Gishiga River up to eighty or eighty-five miles from its mouth. There fish that had perished were still met with in the shallows and on the dried-up river-banks, while in the swift arms of the river dying dog-salmon were making their last struggles against the current. The last fishermen I saw engaged in catching dog-salmon were approximately sixty-five miles from the mouth of the river. They were Reindeer Tungus, who were preparing their winter supplies of fish. A little below them were Reindeer Koryak and other Tungus. Russian fishermen do not ascend the river above thirty miles from its mouth. The farther up the river the dog-salmon is caught, the drier and less savory it is.

1: Jochelson E-5 (1900-01) 1908 RY4Koryak RY4

The principal Russian fishing-stations for the capture of dog-salmon are situated between the town of Gishiginsk and the settlement Kushka (at the mouth of the river), not more than thirteen miles apart. In all the other rivers the Koryak catch the dog-salmon in the estuary or a few miles above it.

The humpback salmon enters the rivers nearly at the same time as the dog-salmon. As compared with the dog-salmon, the humpback salmon visits the Koryak rivers in very insignificant numbers only, but in some years it happens that the main run of fish consists of humpback salmon. In those years the dog-salmon is seldom seen.

At the end of May or in the beginning of June, *Salmo socialis* comes to the river-mouths or to the shallow bays to spawn. It does not ascend the rivers any considerable distance. The run lasts from seven to ten days, after which the fish return to the sea.

The salveline enters the rivers somewhat later than the dog-salmon, and goes rather far up the chief rivers and their tributaries. Not infrequently it spends the winter in these tributaries, and in spring descends to the sea. It is fished in the rivers in summer and until late in the autumn.

Tom-cod is caught in the river-mouths and bays chiefly in the fall; but it is sought both in summer and in winter, in the latter season in ice-holes in the rivers. Tom-cod is found all the year round in Itkana Bay, but even there the principal catch takes place in autumn. In spring, before the beginning of the salmon-run, the Koryak have such a craving for fresh fish that the inhabitants of the villages on the Paren and Kamenskoye side, and even those of the opposite side of Penshina Bay (from Ma'meč), go to Itkana to fish tom-cod.

Fishing-Implements. — To judge from the primitive form of fishing-implements and of the material of which they are made, the Russians have exerted little influence upon the methods of Koryak fishing. Although the salmon-run in the Koryak rivers is not so abundant and varied as in those of Kamchatka, the dog-salmon run alone is so heavy, that, with good seine-nets, the Koryak would be able to take in their whole annual supply of fish within a few days; but they are as yet unfamiliar with seine-nets. For making nets, they use nettle-fibre, which they spin in a primitive and imperfect manner.

On the Gishiga River the Russian settlers employ seines and other nets, which they make of imported Russian or oftener American twine. They are organized in artels.[1] From three to five families join forces, each procuring one net or part of the seine, about sixteen or eighteen metres in length, and from four to five metres in width. Such a net is from fifty-five to seventy meshes in width, and every side of a mesh measures from three and a half to five centimetres. To make a seine-net these separate nets are sewed together. The net, when in position, is about eighty metres long. For

[1] Artel (артель) means in Russian a company of workers, also a gang of seiners.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

177 sinkers, stones are employed, while the floats are made of wood or birch-bark.
● 226 A long seal-skin thong, the use of which has been borrowed by the Russian
286 settlers from the Koryak, serves to set the net. At each end of the seine this thong extends about fifteen metres. One end is left in the hands of the "shoremen," — that is, of the fishermen who remain on the bank of the river, — while the other end is kept in the boat in which the whole seine is placed. As the boat glides gradually away from the bank to the middle of the river, the seine is cast. Then the boat describes a semicircle against the current; then it turns slowly about towards the bank, the net having first been pursed. During this process the "shoremen", following the current, which carries along both the net and the boat, must move along the bank down the river. When the seine has been pursed, the oarsmen haul the boat ashore, and, with the help of the shoremen, gradually pull it in by both ends, and throw the fish into the boat after having stunned them with a club. The boats used by the Russians on the Gishiga River are of the Yukaghir type, and are made of poplar-wood.

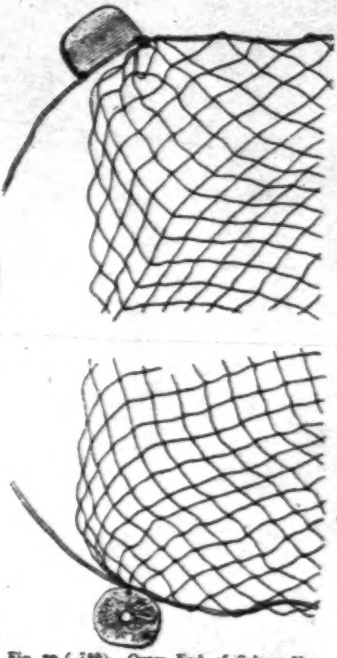

Fig. 70 (1/10). Outer End of Salmon-Net, with Swimmer and Sinker. Height of net, 180 cm.; diameter of sinker, 14 cm.; length of swimmer, 16.5 cm.

177] 286 226

The Maritime Koryak have not adopted the seine-fishery of the Russian settlers. They use nets, — the same kind as they evidently employed before the arrival of the Russians, — tackle, hooks, harpoons, and traps.

Nets are made of nettle-fibre or sinew-thread. They are of the types of casting-nets, hand-nets, or dip-nets. Casting-nets for dog-salmon and humpback salmon (Fig. 70) are made of nettlethread. They are from twelve to fourteen metres in length; in width, from twenty-nine to thirty meshes, the sides of the meshes measuring from three to five centimetres. Disk-shaped sinkers are made of whale-vertebræ, and flat floats of drifted larch-wood are used. The thong to which the net is fastened is made of thong of the ringed-seal. The net is pushed into the water by means of a pole from twenty metres or more in length, (Plate XXVII, Fig. 2), made up of several pieces scarfed together, the joints being held by a winding of thong.
226 To push the net out, the end of the pole is placed in a loop in the thong, by

1: Jochelson E-5 (1900-01) 1908 R94 Koryak R94

means of which a heavy stone anchor is attached to the lower corner of the net. After the net has been pushed into the water, the pole is pulled back and the shore end of the long top line from which the net is suspended is tied to it. Some fishermen tie this end to a stake driven into the bank of the river. The stone anchor is called čaqa'gin ("ground stone"); and the net, ɬoɬai'pañin, which means "into the eyes enters [the fish]." This name points to the casting of the net, because the fish becomes entangled in its meshes.

The ɬoɬai'pañin nets are set up along the seacoast as well as in rivers, in the latter case in quiet spots.

Measures for making this kind of net, — one of bone of whale, the other of the leg-bone of the wild reindeer, — and a wooden netting-needle, are shown in Fig. 71.

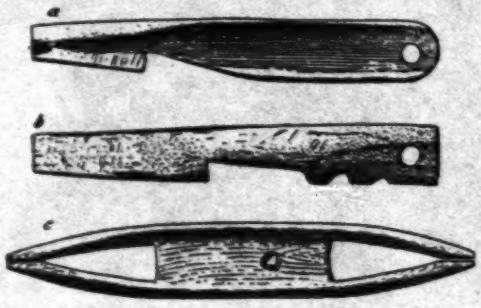

Fig. 71, *a* ($\frac{1}{2}$), *b* ($\frac{1}{2}$), Net-Measures; *c*, Netting-Needle. $\frac{1}{3}$ nat. size.

For catching the salveline and grayling, nets of the same type, made of nettle-thread, but with meshes of smaller size, with sinkers made of whale-vertebræ and with wooden floats, are set in the rivers. The Reindeer Koryak, who fish the salveline and grayling in summer in the tributaries of the larger mountain-streams, make their nets of sinew-thread, or buy nets made of nettle-thread from the Maritime Koryak, whose women are experts in nettle-working.

The Palpal Reindeer Koryak, who fish dog-salmon, humpback salmon, salveline, and rarely chawicha, in the Opuka, Po'qač, and Qayılin Rivers every summer, make nets principally of sinew-thread. The club for stunning the fish (Fig. 72) is usually made of heavy stone-pine wood.

Fig. 72 ($\frac{1}{12}$). Fish-Club. Length, 45 cm.

Fig. 73 represents a fyke for salveline, with hoops. It is netted of nettle-thread. It is placed in shallow and swift places in the river. For this

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

purpose three stakes are driven into the bed of the river, to two of which the front sticks of the net are tied, so that the mouth of the double net is kept wide open, while the point of the net is tied to the third stake. Through the first funnel-shaped bag the fish is carried by the swift current into the second, closed bag, from which it cannot escape. The fish is taken out by untying the bottom of the net, and then shaking it out.

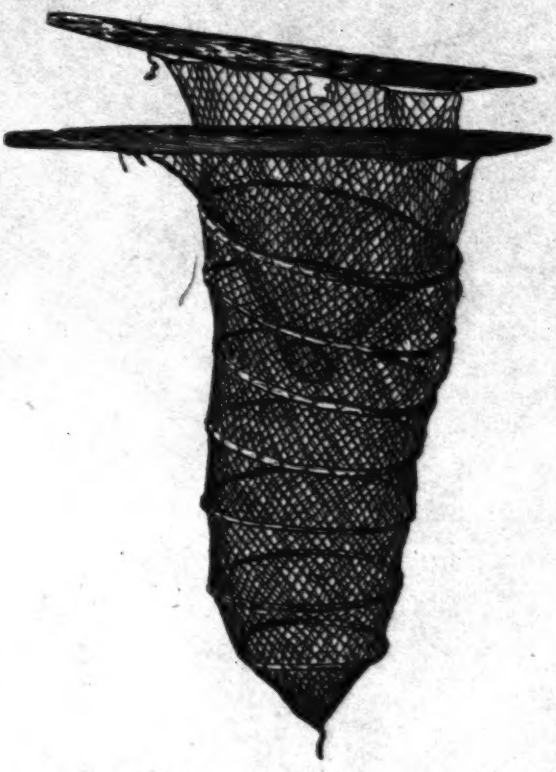

Fig. 73 (${}^{1}/_{15}$). Fyke. Length of net, about 110 cm.

Fig. 74 represents a hand-net on a frame. As shown in the illustration, the net is strung on a stout thong which is attached to the frame, being held in place by being tied to it through a number of perforations. The free farther left-hand end of the thong passes through a perforation in a cross-bar of the frame, and it seems the net is pursed by letting go of this string. In the illustration the specimen is shown tied by strings to the cross-bar. These, however, are probably taken off when the net is in use. Plate XXVII, Fig. 2 shows how the Koryak, standing in the water, hold the hand-net. The photograph from which it was made was taken on the sea-shore, near the mouth of the Ovekova River. Just before the tide begins to come in, the dog-salmon gather near the mouth of the river, ready to enter with the tide, and in such numbers that large quantities are caught even with hand-nets. During low tide the mouth of the river dries up. Only shallow rivulets remain, through which the river-water flows into the sea. A number of families of the Taigonos Reindeer

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

226 Koryak and nomadic Tungus fish at the mouth of the Ovekova River every summer. The hand-net is netted of nettle-thread, and is called krivda (кривда) by the Russians, and čolpi'na by the Koryak.

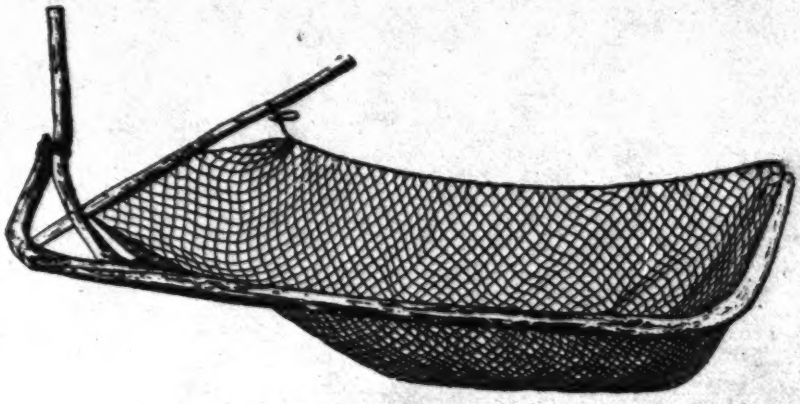

Fig. 74 ($\frac{1}{10}$). Hand-Net. Length, 180 cm.

The Russianized Koryak at the mouth of the Nayakhan River employ a bag-shaped hand-net, one half of the opening of which is tied at its ends to a pole. The fisherman, standing up to his knees in water, drops the net into the river, while holding the free end of the pole with his hands. The Koryak make a hand-net of reindeer-sinew for the purpose of catching tom-cod in small rivers. When it is in use, one fisherman stands in the water and holds the net, while another drives the fish into it.

237

Fig. 75 ($\frac{1}{10}$). Scoop-Net. Largest diameter of hoop, 48 cm.

Fig. 75 represents a scoop-net for *Salmo socialis* and herring. The fish are simply scooped up with it. *Salmo socialis* comes in such dense

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

226 masses, that every time the net is dipped into the water and hauled out again, it is full of fish. As stated before, however, the run of *Salmo socialis* 226 does not last more than about seven days. In the years when herring enter the mouths of Koryak rivers, that fish is also quite numerous, but it does not come in such masses as *Salmo socialis*.

227 In Fig. 76, *a* and *b* represent fishing-tackle for catching tom-cod in

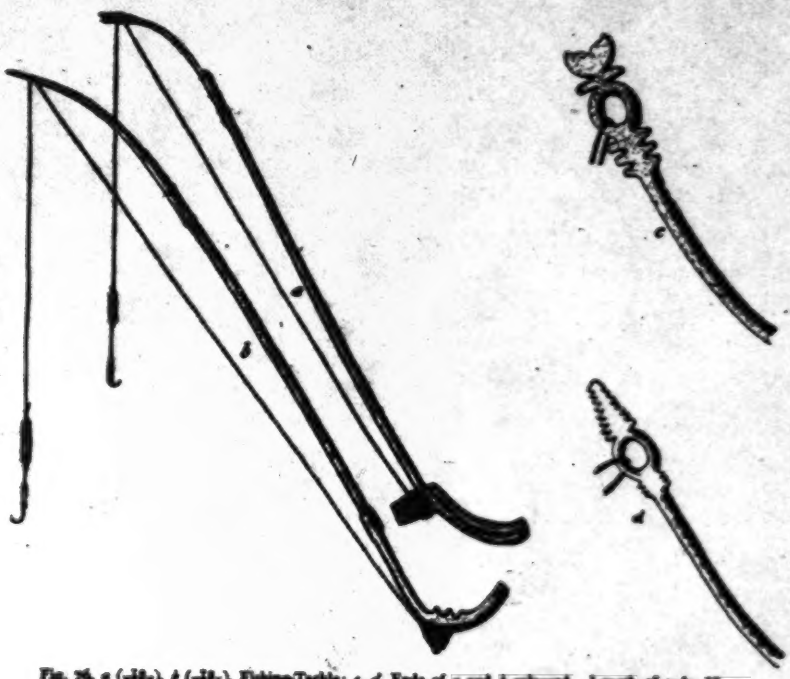

Fig. 76. *a* (ɾiɬʒ), *b* (ɾiɬɬ), Fishing-Tackle; *c*, *d*, Ends of *a* and *b* enlarged. Length of rods, 55 cm.

[237] winter through ice-holes in the mouths of rivers and in bays: *a* was obtained in the village Kuel; *b*, in the village Itkana. The fishing-tackle consists of a wooden rod, a wooden or bone handle, a curved tip prettily carved out of reindeer-antler, and a fish-line twisted of thread made of the sinew of the white whale. The fish-line with hook and sinker is passed through a hole made in the upper bone end of the rod (Fig. 76, *c* and *d*). The other end of the line is wound around the projection on the handle, and is paid out as needed; and in this way the angler, without rising from his place or moving the fishing-rod, can pull his line out from the ice-hole, with the fish

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

caught.[1] The sinker is now made of lead, and the hook of iron; but in olden times the sinker was of stone, and the hook of bone. Plate XXVIII, Fig. 1, represents a Koryak girl, muffled up in a winter overcoat, sitting with fishing-tackle on a bag spread out by the ice-hole. Near by lie a pile of tom-cod, a club for stunning the fish, and a ladle or shovel for clearing the ice-hole from ice.

In Fig. 77 *a*, is illustrated such a shovel made of deer-antler, and fastened to a stick by means of thongs. The length of the handle enables

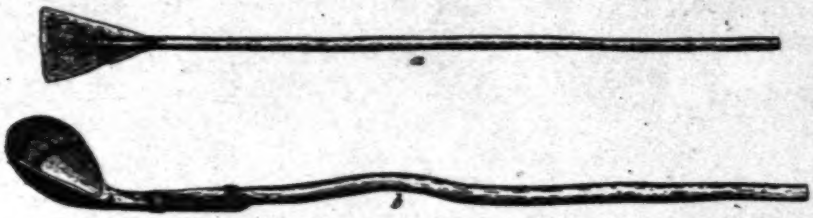

Fig. 77. *a* (ɔiɬ₂), *b* (ɔiɬ₃). Ice-Scoops. Length 94 cm., 103 cm.

the angler to clear the ice-hole without leaving his position. Fig. 77 *b*, represents a ladle made of the horn of a mountain-sheep, which is sometimes used instead of a shovel. The catch of tom-cod from under ice is particularly abundant in the mouths of rivers in the beginning of winter. Women, girls, and boys engage in angling. Thickly studded with ice-holes, and muffled figures sitting near them, the river presents an odd appearance. At Itkana, in the fall, men too engage in fishing tom-cod, which is then particularly abundant in Itkana Bay.

Fig. 78 shows a tackle used for the salveline and grayling. The line is twisted of sinew-thread. Another hook used for flounder, cod, and sculpin, has a stone sinker and a bone barb.

Fig. 79 shows an iron hook (kɪyɪ'ki) for dog-salmon. Its lower end is tied with a strip of skin to a long pole. When the sharp end of the hook has caught the fish, the hook slips off from the pole after the manner of a harpoon, and remains hanging on a long line, the end of which is shown in the illustration. Such hooks are widely used by the Tungus, from whom I believe the Koryak have borrowed them. On Plate XXVII, Fig. 2, is shown a boy with such a hook, on the seashore. A similar hook of smaller size is used by the Koryak for salveline. In olden times the Koryak employed bone hooks and barbed harpoons to catch fish. In excavating ancient underground houses I found fragments of such implements.

The Maritime Koryak build hardly any weirs (ai'pai), nor do they set

[1] A somewhat similar contrivance is found in the fishing-tackle of the Alaskan Eskimo (cf. Nelson, p. 175).

1: Jochelson E-5 (1900-01) 1908 R44 Koryak R44

226

Fig. 1. Woman Fishing.

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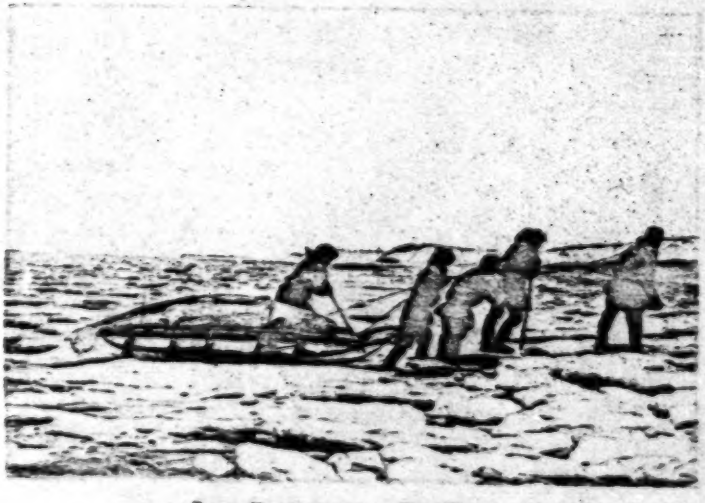

Fig. 2. Hunters bringing in White Whale.

The Koryak.

[Facing p. 533]

1: Jochelson E-5 (1900-01) 1908 R14 Koryak R14

226

traps made of willow. In the sea and in the lower parts of rivers this method of fishing is impracticable, but in mountain-rivers traps and weirs are employed by the Reindeer Koryak.

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Fig. 78 ($\frac{1}{3}\frac{1}{3}$). Fishing-Tackle. Length of hook, 6.4 cm.

Fig. 79 ($\frac{1}{3}\frac{1}{3}$). Fish-Hook made of Iron. Length, 12 cm.

BOATS. — Before entering upon a description of the method of hunting sea-mammals, it will be well to describe the boats employed by the Koryak, as they are indispensable in sea-hunting.

Skin Boats. — The skin boat of the Koryak (Russian, baydara; Koryak, ga'twaat or ne'lge ga'twaat; literally, "of hide a boat") is constructed after the type of the Aleut, Eskimo, and Chukchee skin boat. A wooden frame, lashed together with thong and therefore possessing great elasticity, is covered with seal or walrus skin. The Koryak skin boat is distinguished from the others by several peculiarities of form and construction of the frame. In proportion to its length, it is very wide; and at both ends

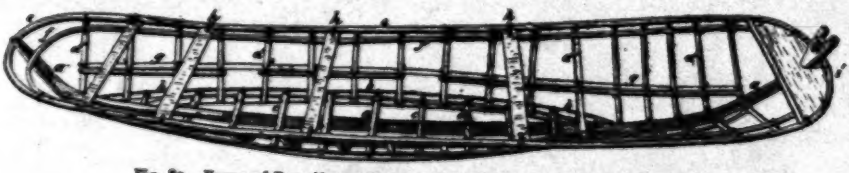


Fig. 80. Frame of Boat (drawn from a model, $\frac{1}{3}\frac{1}{3}$). Length of model, 105 cm.

of the frame, bows are tied to the rails of the boat, giving both prow and stern a semi-circular shape (Fig. 80), while in the Chukchee and Eskimo skin boats the ends of the rails, converging at the prow and stern, are joined by cross-bars only.[1]

[1] Compare Bogoras, The Chukchee, Vol. VII of this series, p. 128; Nelson, Plate LXXIII, Fig. 5a.

1: Jochelson E-5 (1900-01) 1908 R44 Koryak R44

Mollusks are gathered on the seashore and eaten by both the Maritime and the Reindeer Koryak, but are not considered a particularly delicate food. They are gathered mainly when there is not enough fish and other sea-food. Evidently mollusks were formerly eaten to a much greater extent. In excavating ancient underground houses of the Maritime Koryak at the mouth of the river Nayakhan, on a rocky coast rising about sixty metres above the sea, I found piles of shells of the following species:[1] *Purpura saxicola*, *Mytilus edulis*, *Mya arenaria*, and *Littorina grandis*. The same species are in use at present. Fig. 110 shows a pick made of bone of whale, with which to pick mollusks out of the shell. It is called kɪ|ka'-kuna (from kɪ|kăk, the Koryak name for *Littorina grandis*).

Fig. 110 (1/1½). Bone Pick for extracting Shell-Fish from Shells. Length, 10 cm.

The Reindeer Koryak eat the larva of the reindeer-fly (*Œstrus tarandi* Nordenskiöld, or *Tabanus tarandinus* Slunin), which develops under the skin of the reindeer. In spring, when the larvæ creep out from beneath the skin and settle on the hair, the Koryak gather and eat them. Herdsmen gather larvæ in their caps and bring them home as a treat for the children.

Vegetable Food. — Vegetable food plays a lesser rôle among the Koryak than among the Kamchadal, but a greater one than among the Chukchee. We have already learned from the myths that the ancestor of the Koryak, Big-Raven, was fond of berries, edible roots and herbs, and pudding prepared from them.

Koryak women gather edible roots from the burrows of red-backed mice, of which two species (*Evotomys latastei* and *Ev. Wosnessenskii*) are found in the Gishiga region and in the northern part of Kamchatka. In autumn, when the mice have laid in their winter supplies of roots, their burrows are dug up by means of picks, specimens of which are represented in Fig. 111; *a* representing an ancient form of root-digger, with a bone point tied to a wooden bow-shaped handle; while *b* shows the recent type, with an iron point, but preserving its former shape and the manner of attaching the point to the handle.

In locating the burrows of mice, aid is given by dogs which the women take along. The mice are in the habit of cleaning the roots of adhering particles of soil, and of placing them in rows in underground passages. It is deemed a sin to take away all the stores of a mouse. A small part of the supplies should be left. Besides, the burrows are not dug up late in the fall, that the mice may have ample opportunity to replenish their ravaged storerooms. I also found a belief current among the Koryak, widespread among other tribes of northeastern Siberia, that, on finding their storerooms emptied, the mice resort to suicide by hanging themselves in the crotches of branches.

[1] Identified by Dr. Louis P. Gratacap.

17:Antropova E-4 (no date) 1964 RY4 Koryak RY4

In summer, during the fish-runs, all reindeer-breeding Alyutortsy migrated to the mouths of rivers, where they lived with their sedentary kinsmen and worked with them, preparing stocks of fish for the winter. The reindeer herds remained at this time in the care of herdsmen—the boys of the family. This second type of Koryak reindeer-breeding originated much later than the first.

The hunting of sea animals (various species of seal and white whale) was the principal occupation of the northern sedentary Koryaks, who lived on the coast of Penzhina Bay: Kamentsy, Parentsy, Itkantsy. It also played an important role among the rest of the sedentary Koryaks: the Kereks, Apukintsy, Palantsy, Karagintsy, and sedentary Alyutortsy.

Sea hunting was done during two seasons: spring and fall. The spring season began in mid-March and ended in the latter part of June.

The hunters, armed with rifles and spears, drove out in parties of 78 men, or more, by dogsleds on the sea ice, 5 to 10 kilometers from shore. The seals, which climbed out on the ice, were shot with rifles. The kill was loaded on the sled, and the hunters returned to their village either the same or the following day, after a night on the ice. In a party of 78 men, 2 usually had guns, while the rest brought in the catch, loaded it on the sled and transported it; some were simply onlookers. In May, when open water appeared among the ice floes, sea hunting was done in baydars (skin boats).

The fall season began in mid-September and ended in the latter half of November. The fall hunting was also done in baydars and barkasy [flat-bottomed plank boats]. The animals were caught with nets of sealskin strips.

Long ago, the Koryaks hunted whales. According to legends and literary sources of the 18th century, the hunt was conducted with a huge net, woven of thick strips of leather. Large stones were used as sinkers. The net was attached to coastal cliffs and crags. Dozens of baydars, each with more than 10 hunters, armed with harpoons, sailed out into the sea. The hunters drove the whale into the net, in which it became entangled. The heavy sinkers made it impossible for the whale to swim out into the sea with the net. The hunters showered him with spears. Wounded and exhausted, the whale died, and the hunters joined forces to pull him ashore. The Alyutortsy also used joined boats instead of baydars in hunting whales.

The skins of sea animals were used for straps and boot-soles. The meat and blubber were eaten and stocked. The blubber also provided light. To the Kamentsy, Parentsy and Itkantsy, the products of sea hunting—blubber, skins, and sometimes meat as well—served as the principal media of barter with the reindeer-breeders, from whom they obtained deerskins and meat.

Fishing had long been the main occupation of the eastern sedentary Koryaks of the Bering Sea coast: the Karagintsy, the sedentary Alyutortsy and the Apukintsy. Fishing was also important to the western sedentary Koryaks—the Palantsy, and the northern ones—the Kereks—and somewhat less for the settled Koryaks on the Penzhina—Kamentsy, Parentsy and Itkantsy. Fishing was done throughout the summer and early fall season—from mid-June to the middle of September.

The most widespread method of fishing was by means of barriers. The river was fenced off from either bank with two barriers of stakes and twigs. At the place where they met, the fishermen attached under the water a chiruch (a sack-net) or a "muzzle," made of strips of wood, laths or twigs. Such barriers were set in shallow places, where the fishermen could work during shoal runs without boats or kungasy [sailboats]. The "muzzles" were emptied several times a day. During the heavy runs of fish (Siberian salmon and other migrating salmon species), the Koryaks moved to the mouths of rivers. Here groups of households combined into cooperatives and fished

17:Antropova E-4 (no date) 1964 RY4 Koryak RY4

with large nets sewn together from the smaller ones they owned individually.

Other methods of fishing included fishing with the aid of an iron hook (marik) and "dipper" nets. The fisherman stood up to his knees in water, holding in his hands an implement that looked like a large sack-net on a long pole. Sighting a fish, he quickly directed the net towards it, scooping it up and throwing it out on the gravel shore. This method was used in the beginning of the fish-run, before the cooperative set to work.

Most of the catch went into the making of yukola. The fish were disemboweled and hung to dry on special racks. The yukola (fish dried in the sun and the wind) was put away in storehouses—tents on high piles, covered with dry grass. Yukola was usually made by women, while fishing was done chiefly by men. The yukola was the principal food of the people all year; it was also used as feed for the dogs, in addition to "pickled fish"—freshly caught fish piled into a pit, covered with earth, and left to ferment until needed.

An important auxiliary occupation among both sedentary and nomad Koryaks was hunting, which was done solely by men. The fur animals hunted were fox, wolverine, otter, hare and ermine.

Fur-animal hunting was most important among the Palantsy, who lived in a region abounding in Kamchatka sable. These were trapped in nets. Other animals were hunted with guns. Foxes and smaller animals—yevrazhka hamster and ermine—were caught in springtraps. The latter two were usually hunted by adolescent boys. Hares and partridges were caught with a noose. In early spring, many hunters took meat animals—bears, Siberian marmot, wild reindeer and mountain sheep. Tundra animals were usually hunted without the aid of hunting dogs, which were owned by relatively few hunters.

An important role in Koryak economy was taken by the gathering of wild plants. The gathering of edible roots, grasses and berries was women's work. Roots were obtained chiefly from mouse-nests. Searching out a mouse-nest, the woman dug it up with a special wooden hoe and took from it the store of edible roots prepared by the mice. The berries gathered were blueberry, cloudberry and crowberry.

Grass was used to make inner lining for boots, and was also woven into mats, baskets, bags and purses. The weaving of variously shaped baskets, from those in the shape of bowls and trays down to small oval boxes with lids, and also bags of various shapes and sizes was especially developed among the Karagin and Alyutor women.

The men widely engaged in carving bone and the horns of wild sheep.

One of the villages of the northern coastal Koryaks—the village of Paren' on Taygonos Peninsula, was long known for blacksmithery. The Paren' blacksmiths reforged accidentally gotten pieces of iron into knives famed throughout the Koryak territory and beyond it. Even in the early years of the current century, the local Koryak population preferred them to imported Russian and American knives.

Housing

The dwelling of the reindeer-breeding Koryaks (yaranga) was a tent, similar to the Chukchi yaranga (called yayan'a in the Chavchuven dialect, and raran'a in the Alyutor dialect). Cylindrical at the base and conical at the top, it had a framework of poles and was covered with reindeer skins, with the fur outside. The pelts to be used for covering the yaranga were scraped a little; some of the flesh side was peeled off, then it was kneaded and smoked to make it waterproof. For summer dwellings, the hair was removed, or else worn, old coverings were used.

17:Antropova E-4 (no date) 1964 RY4 Koryak RY4

members lived permanently in the villages, engaging in fishing and other work.

The work and life of the herders has also been organized quite differently from what was the case in the past. Each herding brigade has a yaranga. The brigade usually consists of 4–5 herders, a brigadier, a timekeeper and a woman "tent worker," whose duties include preparation of hot meals, mending clothes, and keeping the tent clean.

There are also new elements in the technique of pasturing. Especial stress is laid today on cultivation of new pastures and planned utilization of the old. The collective herd is distributed among various pastures, and an exact itinerary and timetable are set for the herd's migrations. For the purpose of guarding the herd and preserving the young, as well as for the better organization of pasturing and saving of labor, the herders today use riding horses in summer, and reindeer dogs in winter—a method entirely unknown to the Koryaks in the past. Various new methods in the organization and technique of reindeer-breeding are combined with expanded veterinary services. Energetic struggle is waged with epizootics, measures are taken to improve the breed of the reindeer, and so forth.

In 1947 an agricultural school for leading collective-farm personnel was opened in the village of Palana. This school trains specialists in reindeer-breeding—brigadiers, timekeepers, etc.

The collectives of the Koryak National Okrug own herds of many thousands of reindeer, and the productivity of the reindeer-breeding farms is rising. Thus, the Kirov collective (Tigil'skiy Rayon) increased its reindeer herd several times over during the postwar years. The incomes of the collectives in this branch of their economy have risen correspondingly.

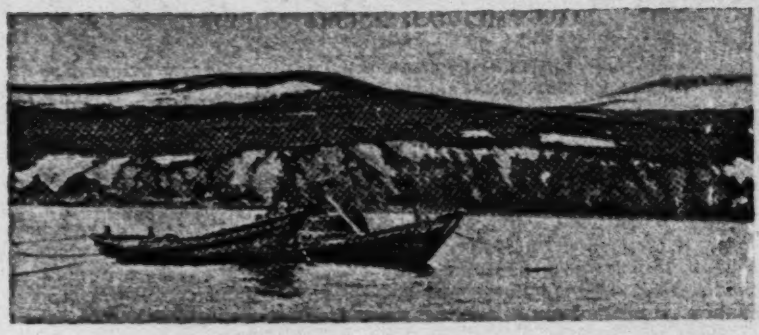
In the coastal collectives, the principal occupation is fishing. The development of fishing collectives is closely connected with the development of the fishing industry in the Koryak National Okrug. During the Five-Year Plans, a large, technically well-equipped socialist fishing industry of nationwide importance has been created in the Koryak National Okrug. The establishment of industrial fishing has greatly affected the development and consolidation of fishing collectives.

The fishing cooperatives are served by the Motor-Fishing Stations (MRS), which have charge of motorized and motorless fleets. The MRS conduct activities to improve the fishermen's skills, teaching the Koryak collective-farm members new skills as brigadiers, motormen, etc. The chief fishing tools today, in place of the old primitive nets, are new and improved stationary, sweep and bag nets. The skin baydar has been entirely supplanted by motored and special motorless boats.

Along with the principal branches of activity, such as fishing and reindeer-breeding, the Koryak collectives are developing gardening and livestock-raising. Attempts to expand agricultural activities were made before the Revolution as well, but even among the sedentary Koryaks they produced no substantial results. The poorly worked earth gave low yields, and the crops often were killed by early frosts. Besides, the Koryaks had very inadequate knowledge of tending gardens or the use of agricultural tools. Livestock-breeding fared no better; the maintenance of livestock on green fodder all year lowered the milk yield of the cows to a minimum.

Gardening and animal husbandry began to develop among the Koryaks after 1930. A large role in this was played by Russian workers and the local Soviet intelligentsia, who helped the collective livestock-breeders and gardeners both by personal example and by teaching them. Quite often, Russian women came to the collectives and demonstrated methods of planting and preparing vegetables; they also taught the Koryaks how to tend

17:Antropova E-4 (no date) 1964 RY4 Koryak RY4



Catching salmon with stationary seines. Molotov collective, Olyutorskiy Rayon, Kamchatskaya Oblast.

cattle. The most favorable conditions for the development of vegetable-gardening exist in the Tigil'skiy Rayon. Today, some of the collectives of this rayon not only produce enough vegetables to meet their own needs, but also grow them for sale.

The income of the collectives from auxiliary enterprises, and principally from fur-hunting, is also rising.

At present, there are several millionaire collectives in the Koryak National Okrug. On the leading collective of the Tigil'skiy Rayon, the Kirov collective, the capital fund reached the figure of 2,000,000 rubles in 1951. This collective was organized in 1941 on the basis of an association for the common pasturing of reindeer. The funds of other collectives are also rising. In 1951, the capital funds of the "Path of the North" and the "Beacon of the North" collectives of Penzhinskiy Rayon reached 1,500,000 rubles.

Simultaneously with the growth and consolidation of the collective farms, there is improvement in the life of the Koryak collective-farm members. The collective villages have become larger and more comfortable. The old semidugout has almost disappeared. Today the collective-farm members live in houses of the Russian type—spacious wooden houses with glass windows. Many new villages have sprung up in the tundra as a result of the transition to sedentary life and the enlargement of collective farms. These include Sedanka Kochevaya (Tigil'skiy Rayon), Krestovoye (Penzhinskiy Rayon), the I. V. Stalin collective-farm village (Penzhinskiy Rayon), and others. In the Karaginskiy Rayon, at a spot where there was only one dugout in 1934, there is today a new rayon center—the large village of Ossora.

The modern Koryak village usually consists of several dozen dwellings and farm buildings, as well as buildings housing cultural and other institutions. Among the collective-farm buildings we must note the stables, which are an innovation among the Koryaks. In all the villages there are bathhouses, bakeries and stores. A great deal of attention is paid to the construction of cultural institutions. In every village there is a school (often with a dormitory), a club or a reading room with a library, a medical or a medical-assistant station, and a nursery. Many villages have been supplied with electricity and radio.

The former dispersion of individual areas of Koryak habitation is steadily being overcome. The means of local communication are being improved. Motorized transport (cutters, etc.) is widely used in